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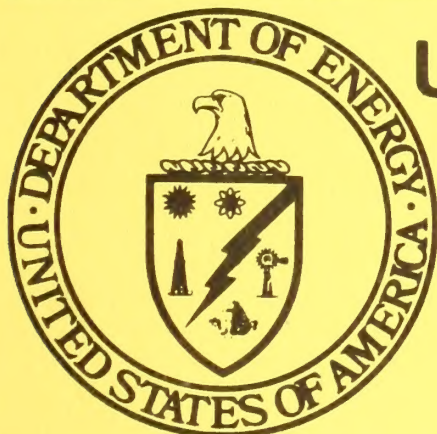
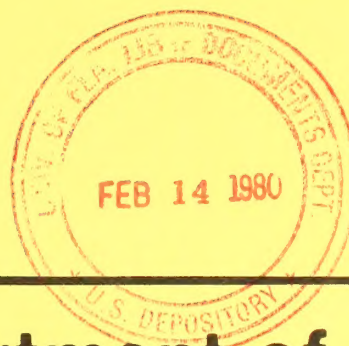
SOLAR/1039-79/06

Monthly Performance Report

SADDLE HILL TRUST

LOT 73

JUNE 1979



U.S. Department of Energy

National Solar Heating and
Cooling Demonstration Program

National Solar Data Program

NOTICE

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MONTHLY PERFORMANCE REPORT

SADDLE HILL TRUST
LOT 73

JUNE 1979

I. SYSTEM DESCRIPTION

Saddle Hill Trust Lot 73 is a single-family residence in Medway, Massachusetts. Solar energy is used for preheating incoming city water. The system has an array of flat-plate collectors with a gross area of 45 square feet. The array faces south at an angle of 45 degrees to the horizontal. A 60 percent glycerol solution is used as the medium for delivering solar energy from the collector array to storage. Water is the transport medium that delivers solar energy to storage and to the domestic-hot-water (DHW) heater. Solar energy is stored in the basement in an 80-gallon preheat tank. This preheated city water is supplied, on demand, to a conventional 40-gallon DHW tank. When solar energy is insufficient to satisfy the hot water requirements, the gas-driven DHW heater provides auxiliary energy for water heating. The system, shown schematically in Figure 1, has two modes of solar operation.

Mode 1 - Collector-to-Storage: This mode activates when a 40°F temperature difference exists between the collector and the preheat tank. The solar pump is on. This mode continues operating until the temperature difference drops to 20°F.

Mode 2 - Storage-to-DHW Tank: This mode activates when there is a demand for hot water. Hot water from the top of the preheat tank is transferred to the DHW tank to replace the amount removed. Simultaneously, city water is automatically supplied to the preheat tank.

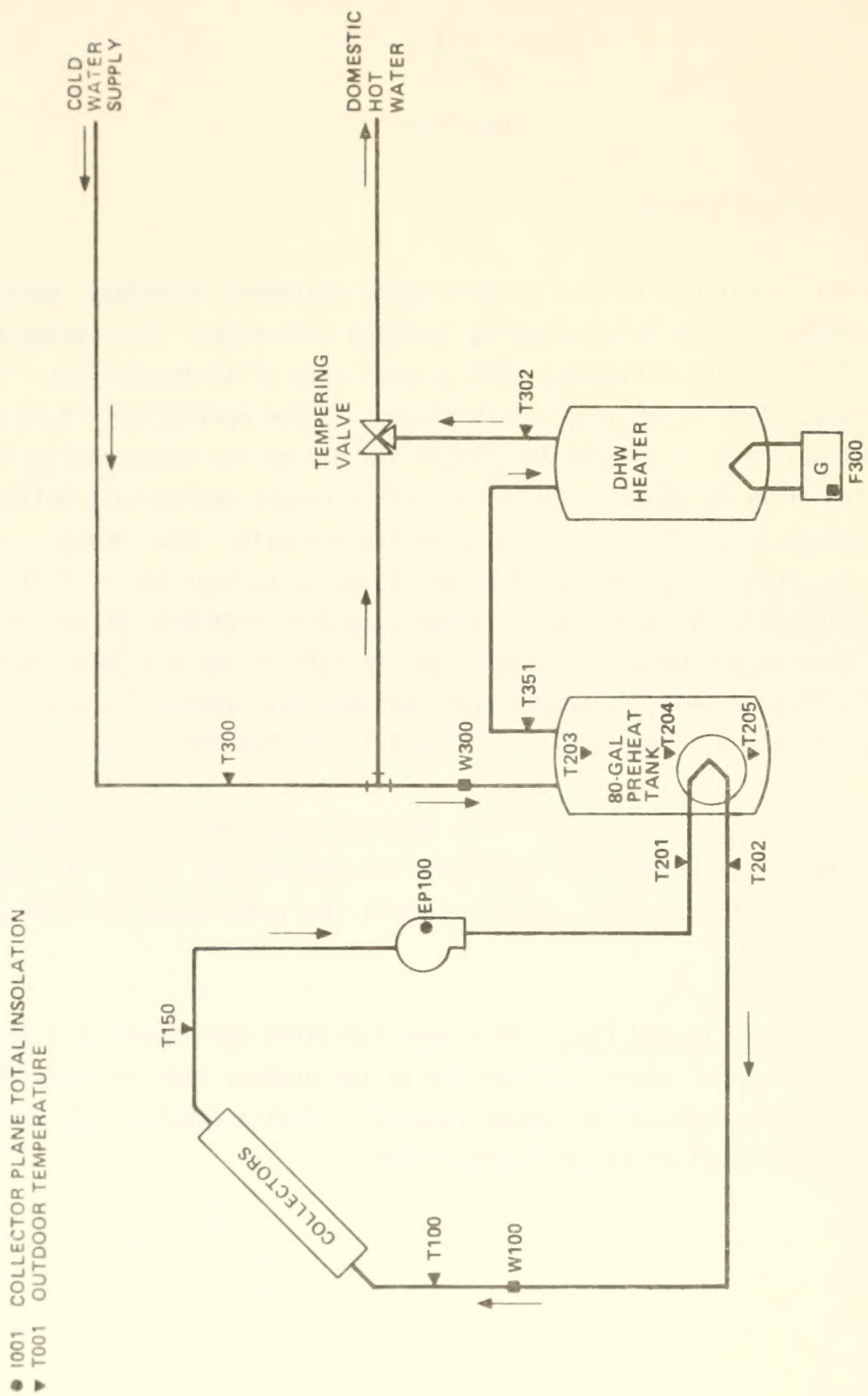


Figure 1. SADDLE HILL TRUST, LOT NO. 73 SOLAR ENERGY SYSTEM SCHEMATIC

II. PERFORMANCE EVALUATION

INTRODUCTION

The site was occupied in June and the solar energy system operated continuously during the month. Total solar energy collected was 1.4 million Btu and the total solar energy used was 0.87 million Btu or 62 percent of the collected energy. Stored energy increased by 0.03 million Btu and storage losses amounted to 0.39 million Btu. Solar energy satisfied 77 percent of the DHW requirements. The solar energy system incurred an electrical expense of 0.19 million Btu and provided a fossil fuel savings of 1.4 million Btu.

WEATHER CONDITIONS

During the month, total incident solar energy on the collector array was 2.4 million Btu for a daily average of 1757 Btu per square foot. This was above the estimated average daily solar radiation for this geographical area during June of 1513 Btu per square foot for a south-facing plane with a tilt of 45 degrees to the horizontal. The average ambient temperature during June was 67°F and was close to the long-term average for June of 68°F.

THERMAL PERFORMANCE

System - During June the solar energy system performed approximately the same as expected. The expected performance was determined from a modified f-chart analysis using measured weather and subsystem loads as input. Solar energy used by the system was estimated by assuming that all energy collected would be applied to the load. Actual solar energy used was 0.87 million Btu versus an estimated 0.98 million Btu. System total solar fraction was 77 percent versus an estimated 87 percent.

Collector - The total incident solar radiation on the collector array for the month of June was 2.4 million Btu. During the period the collector loop was operating, the total insolation amounted to 2.2 million Btu. The total collected solar energy for the month of June was 1.4 million Btu, resulting in a collector array efficiency of 59 percent, based on total incident insolation. Solar energy delivered from the collector array to storage was 1.3 million Btu. Energy loss during transfer from the collector array to storage was 0.12 million Btu. This loss represented 9 percent of the energy collected. Operating energy required by the collector loop was 0.19 million Btu.

Storage - Solar energy delivered to storage was 1.3 million Btu. There were 0.87 million Btu delivered from storage to the DHW. Energy loss from storage was 0.39 million Btu. This loss represented 30 percent of the energy delivered to storage. The storage efficiency was 70 percent: This is calculated as the ratio of the sum of the energy removed from storage and the change in stored energy, to the energy delivered to storage. The average storage temperature for the month was 106°F.

DHW Load - The DHW subsystem consumed 0.87 million Btu of solar energy and 0.43 million Btu of auxiliary fossil fuel energy to satisfy a hot water load of 1.1 million Btu. The solar fraction of this load was 77 percent. A daily average of 68 gallons of DHW was consumed at an average temperature of 126°F delivered from the tank.

OBSERVATIONS

There were no special observations to report this month.

ENERGY SAVINGS

The solar energy system provided a fossil fuel energy savings of 1.4 million Btu, while incurring an electrical energy expense of 0.19 million Btu.

III. ACTION STATUS

No action is required at this time.

MONTHLY REPORT
SITE SUMMARY

SITE: SADDLE HILLS TRUST LOT #73 , MEDWAY, MA 02053
REPORT PERIOD: JUNE, 1979

SULAR/1039-79/06

SITE/SYSTEM DESCRIPTION:

THE SADDLE HILL TRUST, LOT #73 SOLAR ENERGY SYSTEM FURNISHES HOT WATER YEAR-ROUND TO A SINGLE FAMILY DWELLING. THE COLLECTOR IS A TWO-PANEL LIQUID COLLECTOR. STORAGE SPACE IS AN 80 GALLON WATER TANK. AUXILIARY HOT WATER IS PROVIDED BY A GAS HOT WATER HEATER.

GENERAL SITE DATA:

INCIDENT SOLAR ENERGY

COLLECTED SOLAR ENERGY

AVERAGE AMBIENT TEMPERATURE
AVERAGE BUILDING TEMPERATURE
EXCESS SOLAR CONVERSION EFFICIENCY
EXCESS OPERATING ENERGY
TOTAL SYSTEM OPERATING ENERGY
TOTAL ENERGY CONSUMED

| | |
|-------|-------------|
| 2.372 | MILLION BTU |
| 52721 | BTU/SQ.FT. |
| 1.410 | MILLION BTU |
| 31332 | BTU/SQ.FT. |
| 67 | DEGREES F |
| N/A | DEGREES F |
| 0.37 | |
| 0.189 | MILLION BTU |
| 0.189 | MILLION BTU |
| 2.030 | MILLION BTU |

SUBSYSTEM SUMMARY:

| | | |
|---------------------|-------|------|
| LOAD | | |
| SOLAR FRACTION USED | 0.869 | N.A. |
| OPERATING ENERGY | 0.259 | N.A. |
| AUX. THERMAL ENERGY | 0.432 | N.A. |
| AUX. ELECTRIC FUEL | 1.448 | N.A. |
| AUX. FOSSIL FUEL | | |
| ELECTRICAL SAVINGS | | |
| FOSSIL SAVINGS | | |
| HOT WATER | 1.100 | 77 |

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

| | |
|---------------|-----|
| SYSTEM TOTAL | BTU |
| 1.106 MILLION | BTU |
| 77 PERCENT | |
| 0.869 MILLION | BTU |
| 0.189 MILLION | BTU |
| 0.259 MILLION | BTU |
| N.A. | BTU |
| 0.432 MILLION | BTU |
| 0.189 MILLION | BTU |
| 0.448 MILLION | BTU |

SYSTEM PERFORMANCE FACTOR:

1.044

- * DENOTES UNAVAILABLE DATA
@ DENOTES NULL DATA
N.A. DENOTES NOT APPLICABLE DATA

REFERENCE: USER'S GUIDE TO THE MONTHLY PERFORMANCE REPORT
OF THE NATIONAL SOLAR DATA PROGRAM, FEBRUARY 28, 1978,
SOLAR/0004-76/16

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT SITE SUMMARY

SITE: SADDLE HILLS TRUST LOT #73 • MEDWAY, MA 02053
REPORT PERIOD: JUNE, 1979

SOLAR/1039-79/06

SITE/SYSTEM DESCRIPTION:

THE SADDLE HILL TRUST, LOT #73 SOLAR ENERGY SYSTEM FURNISHES HOT WATER YEAR-ROUND TO A SINGLE FAMILY DWELLING. THE COLLECTOR IS A TWO-PANEL LIQUID COLLECTOR. STORAGE SPACE IS AN 80 GALLON WATER TANK. AUXILIARY HOT WATER IS PROVIDED BY A GAS HOT WATER HEATER.

GENERAL SITE DATA:

INCIDENT SOLAR ENERGY

COLLECTED SOLAR ENERGY

AVERAGE AMBIENT TEMPERATURE

AVERAGE BUILDING TEMPERATURE

ECSS SOLAR CONVERSION EFFICIENCY

ECSS OPERATING ENERGY

TOTAL SYSTEM OPERATING ENERGY

TOTAL SYSTEM CONSUMED

2.503 GIGA JOULES
598696 KJ/SQ.M.
1.487 GIGA JOULES
355810 KJ/SQ.M.
20 DEGREES C
N.A. DEGREES C
0.37
0.199 GIGA JOULES
0.199 GIGA JOULES
2.142 GIGA JOULES

SUBSYSTEM SUMMARY:

LOAD
SOLAR FRACTION
SOLAR ENERGY USED
OPERATING ENERGY
AUX. THERMAL ENG
AUX. ELECTRIC FUEL
AUX. FOSSIL FUEL
ELECTRICAL SAVINGS
FOSSIL SAVINGS

HOT WATER
1.167
0.917
N.A.
0.273
N.A.
0.456
N.A.
1.528

HEATING
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.

COOLING
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.
N.A.

SYSTEM TOTAL
1.167 GIGA JOULES
77 PERCENT
0.917 GIGA JOULES
0.199 GIGA JOULES
0.273 GIGA JOULES
N.A. GIGA JOULES
0.456 GIGA JOULES
-0.199 GIGA JOULES
1.528 GIGA JOULES

SYSTEM PERFORMANCE FACTOR:

1.044

* DENOTES UNAVAILABLE DATA

0 DENOTES NULL DATA

N.A. DENOTES NOT APPLICABLE DATA

REFERENCE: USER'S GUIDE TO THE MONTHLY PERFORMANCE REPORT
OF THE NATIONAL SOLAR DATA PROGRAM, FEBRUARY 26, 1978.
SOLAR/0004-78/18

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT ENERGY COLLECTION AND STORAGE SUBSYSTEM (ECSS)

SOLAR/1039-79/06

SITE: SADDLE HILLS TRUST LOT #73 • MEDWAY, MA 02053

REPORT PERIOD: JUNE, 1979

| DAY OF MONTH | INCIDENT SOLAR ENERGY MILLION BTU | AMBIENT TEMP DEG-F | ENERGY TO LOADS MILLION BTU | AUX THERMAL TO ECSS MILLION BTU | ECSS OPERATING ENERGY MILLION BTU | ECSS ENERGY REJECTED MILLION BTU | ECSS SOLAR CONVERSION EFFICIENCY |
|--------------------|---|--------------------------|---|---|---|--|--|
| 1 | 0.071 | 63 | 0.038 | N O T | 0.007 | N U T | 0.531 |
| 2 | 0.067 | 64 | 0.032 | | 0.007 | | 0.477 |
| 3 | 0.037 | 66 | 0.016 | | 0.007 | | 0.426 |
| 4 | 0.027 | 63 | 0.018 | A P P | 0.006 | A P P | 0.662 |
| 5 | 0.050 | 63 | 0.010 | | 0.006 | | 0.190 |
| 6 | 0.097 | 68 | 0.040 | | 0.007 | | 0.417 |
| 7 | 0.092 | 66 | 0.032 | | 0.007 | | 0.344 |
| 8 | 0.037 | 66 | 0.025 | | 0.007 | | 0.673 |
| 9 | 0.067 | 74 | 0.038 | | 0.007 | | 0.565 |
| 10 | 0.084 | 71 | 0.013 | | 0.006 | | 0.152 |
| 11 | 0.092 | 71 | 0.034 | | 0.006 | | 0.372 |
| 12 | 0.110 | 61 | 0.035 | A B L E | 0.007 | A B L E | 0.321 |
| 13 | 0.090 | 61 | 0.038 | | 0.006 | | 0.425 |
| 14 | 0.104 | 67 | 0.045 | | 0.007 | | 0.430 |
| 15 | * | * | * | | * | | * |
| 16 | 0.066 | 80 | 0.032 | | 0.005 | | 0.483 |
| 17 | 0.087 | 78 | 0.024 | | 0.007 | | 0.276 |
| 18 | 0.057 | 78 | 0.027 | | 0.005 | | 0.479 |
| 19 | 0.098 | 63 | 0.043 | | 0.006 | | 0.442 |
| 20 | 0.107 | 66 | 0.026 | | 0.007 | | 0.247 |
| 21 | 0.099 | 62 | 0.033 | | 0.006 | | 0.330 |
| 22 | 0.088 | 69 | 0.031 | | 0.006 | | 0.350 |
| 23 | 0.082 | 73 | 0.024 | | 0.007 | | 0.286 |
| 24 | 0.085 | 67 | 0.004 | | 0.006 | | 0.043 |
| 25 | 0.088 | 60 | 0.034 | | 0.006 | | 0.383 |
| 26 | 0.098 | 64 | 0.043 | | 0.006 | | 0.433 |
| 27 | 0.091 | 64 | 0.027 | | 0.006 | | 0.294 |
| 28 | 0.076 | 69 | 0.029 | | 0.007 | | 0.382 |
| 29 | 0.080 | 68 | 0.031 | | 0.006 | | 0.364 |
| 30 | 0.069 | 68 | 0.022 | | 0.007 | | 0.319 |
| SUM | 2.372 | - | 0.869 | N.A. | 0.189 | N.A. | - |
| AVG | 0.079 | 67 | 0.029 | N.A. | 0.006 | N.A. | 0.366 |
| NBS ID | Q001 | N113 | | | Q102 | | N111 |

* DENOTES UNAVAILABLE DATA.

ø DENOTES NULL DATA.

N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT COLLECTOR ARRAY PERFORMANCE

SITE: SADDLE HILLS TRUST LOT #73 • MEDWAY, MA 02055 SOLAR/1039-79/06
REPORT PERIOD: JUNE, 1979

| DAY OF MONTH | INCIDENT SOLAR ENERGY MILLION BTU | OPERATIONAL INCIDENT ENERGY MILLION BTU | COLLECTED SOLAR ENERGY MILLION BTU | DAYTIME AMBIENT TEMP DEG F | COLLECTOR ARRAY EFFICIENCY |
|--------------------|---|---|--|-------------------------------------|----------------------------------|
| 1 | 0.071 | 0.066 | 0.043 | 72 | 0.613 |
| 2 | 0.067 | 0.061 | 0.043 | 77 | 0.644 |
| 3 | 0.037 | 0.034 | 0.023 | 73 | 0.615 |
| 4 | 0.027 | 0.024 | 0.015 | 69 | 0.560 |
| 5 | 0.050 | 0.048 | 0.032 | 69 | 0.647 |
| 6 | 0.097 | 0.092 | 0.060 | 82 | 0.617 |
| 7 | 0.092 | 0.086 | 0.057 | 81 | 0.623 |
| 8 | 0.037 | 0.034 | 0.022 | 74 | 0.592 |
| 9 | 0.067 | 0.063 | 0.040 | * | 0.595 |
| 10 | 0.084 | 0.079 | 0.055 | * | 0.654 |
| 11 | 0.092 | 0.085 | 0.052 | 81 | 0.563 |
| 12 | 0.110 | 0.103 | 0.065 | 71 | 0.594 |
| 13 | 0.090 | 0.082 | 0.046 | * | 0.511 |
| 14 | 0.104 | 0.097 | 0.066 | 82 | 0.636 |
| 15 | * | * | * | * | * |
| 16 | 0.066 | 0.061 | 0.045 | * | 0.684 |
| 17 | 0.087 | 0.082 | 0.049 | 68 | 0.563 |
| 18 | 0.057 | 0.051 | 0.032 | 90 | 0.565 |
| 19 | 0.098 | 0.092 | 0.053 | 71 | 0.541 |
| 20 | 0.107 | 0.099 | 0.068 | 79 | 0.641 |
| 21 | 0.099 | 0.091 | 0.056 | 76 | 0.564 |
| 22 | 0.088 | 0.081 | 0.055 | 85 | 0.624 |
| 23 | 0.082 | 0.078 | 0.046 | 84 | 0.556 |
| 24 | 0.065 | 0.078 | 0.042 | 79 | 0.491 |
| 25 | 0.088 | 0.081 | 0.049 | 72 | 0.560 |
| 26 | 0.098 | 0.090 | 0.056 | 80 | 0.567 |
| 27 | 0.091 | 0.083 | 0.054 | 78 | 0.591 |
| 28 | 0.076 | 0.072 | 0.043 | 83 | 0.562 |
| 29 | 0.080 | 0.074 | 0.051 | 82 | 0.642 |
| 30 | 0.069 | 0.066 | 0.046 | * | 0.664 |
| SUM | 2.372 | 2.207 | 1.410 | - | - |
| AVG | 0.079 | 0.074 | 0.047 | 78 | 0.594 |
| NBSID | 0001 | | 0100 | | N100 |

* DENOTES UNAVAILABLE DATA.

@ DENOTES NULL DATA.

N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT STORAGE PERFORMANCE

SITE: SADDLE HILLS TRUST LOT #73 • MEDWAY, MA 02053
 REPORT PERIOD: JUNE, 1979

| DAY OF MONTH | ENERGY TO STORAGE MILLION BTU | ENERGY FROM STORAGE MILLION BTU | CHANGE IN STORED ENERGY MILLION BTU | STORAGE AVERAGE TEMP DEG F | STORAGE EFFICIENCY |
|--------------------|---|---|---|-------------------------------------|-----------------------|
| 1 | 0.042 | 0.038 | -0.007 | 89 | 0.732 |
| 2 | 0.041 | 0.032 | -0.002 | 82 | 0.738 |
| 3 | 0.024 | 0.016 | -0.002 | 78 | 0.755 |
| 4 | 0.014 | 0.018 | -0.005 | 74 | 0.970 |
| 5 | 0.031 | 0.010 | -0.014 | 63 | 0.775 |
| 6 | 0.056 | 0.040 | -0.003 | 101 | 0.669 |
| 7 | 0.053 | 0.032 | -0.005 | 100 | 0.697 |
| 8 | 0.022 | 0.025 | -0.006 | 88 | 0.760 |
| 9 | 0.037 | 0.038 | -0.010 | 94 | 0.750 |
| 10 | 0.051 | 0.013 | -0.028 | 97 | 0.793 |
| 11 | 0.047 | 0.034 | -0.004 | 114 | 0.634 |
| 12 | 0.059 | 0.035 | -0.005 | 107 | 0.677 |
| 13 | 0.039 | 0.038 | -0.012 | 117 | 0.665 |
| 14 | 0.062 | 0.045 | -0.004 | 99 | 0.793 |
| 15 | * | * | * | * | * |
| 16 | 0.043 | 0.032 | -0.023 | 104 | 1.285 |
| 17 | 0.046 | 0.024 | -0.006 | 124 | 0.661 |
| 18 | 0.030 | 0.027 | -0.012 | 123 | 0.507 |
| 19 | 0.047 | 0.043 | -0.013 | 114 | 0.639 |
| 20 | 0.063 | 0.026 | -0.020 | 106 | 0.738 |
| 21 | 0.051 | 0.033 | -0.001 | 121 | 0.627 |
| 22 | 0.050 | 0.031 | -0.003 | 119 | 0.667 |
| 23 | 0.039 | 0.024 | -0.004 | 126 | 0.502 |
| 24 | 0.034 | 0.004 | -0.015 | 132 | 0.541 |
| 25 | 0.043 | 0.004 | -0.007 | 121 | 0.618 |
| 26 | 0.048 | 0.043 | -0.018 | 125 | 0.510 |
| 27 | 0.048 | 0.027 | -0.006 | 111 | 0.654 |
| 28 | 0.037 | 0.029 | -0.006 | 112 | 0.611 |
| 29 | 0.047 | 0.031 | -0.001 | 102 | 0.688 |
| 30 | 0.042 | 0.022 | -0.007 | 98 | 0.700 |
| SUM | 1.290 | 0.869 | 0.031 | - | - |
| AVG | 0.043 | 0.029 | 0.001 | 106 | 0.698 |
| NBS ID | Q200 | Q201 | Q202 | | N106 |

* DENOTES UNAVAILABLE DATA.

@ DENOTES NULL DATA.

N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

MONTHLY REPORT HOT WATER SUBSYSTEM

SITE: SADDLE HILLS TRUST LOT #73, MEDWAY, MA 02053
REPORT PERIOD: JUNE, 1979

SOLAR/1039-79/06

| DAY OF MON. | HOT WATER LOAD MILLION BTU | SOLAR FR. OF LOAD PER CENT | SOLAR ENERGY USED MILLION BTU | OPER ENERGY MILLION BTU | AUX THERMAL USED MILLION BTU | AUX ELECT FUEL MILLION BTU | AUX FOSSIL FUEL MILLION BTU | ELECT ENERGY SAVINGS MILLION BTU | FOSSIL ENERGY SAVINGS MILLION BTU | SUP. WAT. TEMP. DEG F | HOT WAT. TEMP. DEG F | HOT WATER USED GAL |
|-------------------|--|--|---|----------------------------------|--|--|---|--|---|-----------------------------------|----------------------------------|-----------------------------|
| 1 | 0.062 | 59 | 0.038 | N O T | 0.031 | N O T | 0.051 | N O T | 0.063 | 56 | 133 | 108 |
| 2 | 0.076 | 45 | 0.032 | N O T | 0.049 | N O T | 0.082 | N O T | 0.053 | 59 | 131 | 124 |
| 3 | 0.052 | 34 | 0.016 | N O T | 0.042 | N O T | 0.070 | N O T | 0.026 | 59 | 135 | 83 |
| 4 | 0.070 | 27 | 0.016 | N O T | 0.055 | N O T | 0.092 | N O T | 0.030 | 59 | 136 | 108 |
| 5 | 0.030 | 24 | 0.010 | A P P L I C A B L E | 0.024 | A P P L I C A B L E | 0.040 | A P P L I C A B L E | 0.016 | 61 | 131 | 51 |
| 6 | 0.047 | 58 | 0.040 | A P P L I C A B L E | 0.005 | A P P L I C A B L E | 0.008 | A P P L I C A B L E | 0.067 | 60 | 129 | 83 |
| 7 | 0.036 | 81 | 0.032 | A P P L I C A B L E | 0.006 | A P P L I C A B L E | 0.011 | A P P L I C A B L E | 0.053 | 59 | 126 | 66 |
| 8 | 0.042 | 77 | 0.025 | A P P L I C A B L E | 0.020 | A P P L I C A B L E | 0.033 | A P P L I C A B L E | 0.041 | 61 | 130 | 76 |
| 9 | 0.050 | 67 | 0.035 | A P P L I C A B L E | 0.009 | A P P L I C A B L E | 0.016 | A P P L I C A B L E | 0.063 | 60 | 127 | 92 |
| 10 | 0.019 | 66 | 0.013 | A P P L I C A B L E | 0.009 | A P P L I C A B L E | 0.015 | A P P L I C A B L E | 0.021 | 60 | 123 | 36 |
| 11 | 0.033 | 87 | 0.034 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.057 | 61 | 126 | 60 |
| 12 | 0.038 | 95 | 0.035 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.059 | 62 | 124 | 71 |
| 13 | 0.035 | 99 | 0.038 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.064 | 62 | 123 | 64 |
| 14 | 0.048 | 100 | 0.045 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.074 | 61 | 123 | 98 |
| 15 | * | * | * | * | * | * | * | * | * | * | * | * |
| 16 | 0.038 | 100 | 0.032 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.053 | 63 | 117 | 80 |
| 17 | 0.022 | 100 | 0.024 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.040 | 65 | 119 | 46 |
| 18 | 0.027 | 100 | 0.027 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.045 | 62 | 125 | 51 |
| 19 | 0.040 | 100 | 0.043 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.072 | 64 | 127 | 73 |
| 20 | 0.033 | 100 | 0.026 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.044 | 63 | 120 | 66 |
| 21 | 0.030 | 100 | 0.033 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.055 | 64 | 119 | 63 |
| 22 | 0.032 | 100 | 0.031 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.051 | 63 | 120 | 61 |
| 23 | 0.021 | 100 | 0.024 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.039 | 63 | 125 | 40 |
| 24 | 0.003 | 100 | 0.004 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.006 | 63 | 128 | 6 |
| 25 | 0.031 | 100 | 0.034 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.056 | 63 | 130 | 55 |
| 26 | 0.038 | 100 | 0.043 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.071 | 64 | 127 | 72 |
| 27 | 0.027 | 100 | 0.027 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.045 | 63 | 129 | 50 |
| 28 | 0.028 | 100 | 0.029 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.048 | 64 | 125 | 54 |
| 29 | 0.037 | 100 | 0.031 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.051 | 63 | 117 | 81 |
| 30 | 0.024 | 100 | 0.022 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.000 | A P P L I C A B L E | 0.037 | 63 | 113 | 57 |
| SUM | 1.106 | - | 0.869 | N.A. | 0.259 | N.A. | 0.432 | N.A. | 1.446 | - | - | 2041 |
| AVG | 0.037 | 77 | 0.029 | N.A. | 0.009 | N.A. | 0.014 | N.A. | 0.048 | 62 | 126 | 68 |
| NBS | Q302 | N300 | Q300 | Q303 | Q301 | Q305 | Q306 | Q311 | Q315 | N305 | N307 | N308 |

* DENOTES UNAVAILABLE DATA.
@ DENOTES NULL DATA.
N.A. DENOTES NOT APPLICABLE DATA.

SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM

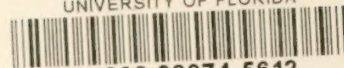
MONTHLY REPORT ENVIRONMENTAL SUMMARY

SITE: SADDLE HILLS TRUST LOT #73 • MEDWAY, MA 02053
REPORT PERIOD: JUNE, 1979
SOLAR/1039-79/06

| DAY OF MONTH | TOTAL INSOLATION BTU/SQ.FT | DIFFUSE INSOLATION BTU/SQ.FT | AMBIENT TEMPERATURE DEG F | DAYTIME AMBIENT TEMP DEG F | RELATIVE HUMIDITY PERCENT | WIND DIRECTION DEGREES | WIND SPEED M.P.H. |
|--------------------|----------------------------------|------------------------------------|---------------------------------|-------------------------------------|---------------------------------|------------------------------|-------------------------|
| 1 | 1574 | NOT APPLICABLE | 63 | 72 | NOT APPLICABLE | NOT APPLICABLE | NOT APPLICABLE |
| 2 | 1486 | | 64 | 77 | | | |
| 3 | 621 | | 66 | 73 | | | |
| 4 | 603 | APPLICABLE | 63 | 69 | APPLICABLE | APPLICABLE | APPLICABLE |
| 5 | 1117 | | 63 | 69 | | | |
| 6 | 2147 | | 68 | 82 | | | |
| 7 | 2046 | APPLICABLE | 66 | 81 | APPLICABLE | APPLICABLE | APPLICABLE |
| 8 | 812 | | 66 | 74 | | | |
| 9 | 1488 | | 74 | * | | | |
| 10 | 1856 | APPLICABLE | 71 | * | APPLICABLE | APPLICABLE | APPLICABLE |
| 11 | 2042 | | 71 | 81 | | | |
| 12 | 2443 | | 61 | 71 | | | |
| 13 | 1997 | APPLICABLE | 61 | * | APPLICABLE | APPLICABLE | APPLICABLE |
| 14 | 2304 | | 67 | 82 | | | |
| 15 | * | | * | * | | | |
| 16 | 1457 | APPLICABLE | 80 | * | APPLICABLE | APPLICABLE | APPLICABLE |
| 17 | 1526 | | 76 | 88 | | | |
| 18 | 1264 | | 78 | 96 | | | |
| 19 | 2179 | APPLICABLE | 63 | 71 | APPLICABLE | APPLICABLE | APPLICABLE |
| 20 | 2367 | | 66 | 79 | | | |
| 21 | 2209 | | 62 | 76 | | | |
| 22 | 1957 | APPLICABLE | 69 | 85 | APPLICABLE | APPLICABLE | APPLICABLE |
| 23 | 1825 | | 73 | 84 | | | |
| 24 | 1885 | | 67 | 79 | | | |
| 25 | 1947 | APPLICABLE | 60 | 72 | APPLICABLE | APPLICABLE | APPLICABLE |
| 26 | 2185 | | 64 | 80 | | | |
| 27 | 2026 | | 64 | 78 | | | |
| 28 | 1687 | APPLICABLE | 69 | 83 | APPLICABLE | APPLICABLE | APPLICABLE |
| 29 | 1775 | | 68 | 82 | | | |
| 30 | 1539 | | 68 | * | | | |
| SUM | 52721 | N.A. | - | - | - | - | - |
| AVG | 1757 | N.A. | 67 | 76 | N.A. | N.A. | N.A. |
| NBS ID | Q001 | | N113 | | | N115 | N114 |

* DENOTES UNAVAILABLE DATA.
@ DENOTES NULL DATA.
N.A. DENOTES NOT APPLICABLE DATA.

UNIVERSITY OF FLORIDA



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